Video-PX4670-EX / Video-PX4350-DP / 3DForce3450-DVI / Video-PX309-Quad / Video-339PCI-HLX

User's Manual

Version 6.00

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Introduction

Experience the Power of HD

Experience the power of HD with the AMD Radeon HD 3450/4670/5450 Series of GPUs - graphics processing designed for entertainment and productivity.

HD Video Beyond 1080p

With AMD AvivoTM HD technology, the latest Blu-ray and HD DVD movies play as smoothly as intended; at True HD 1080p. The Unified Video Decoder (UVD) relieves your CPU from the taxing video decode process and enables time-saving multi-tasking. Enjoy quality to spare with resolutions upscaled beyond 1080p for the most processing-intensive content. And with a choice of digital outputs, you have more options when enjoying your digital entertainment.¹

HD Gaming Technology

Play the next generation of HD games featuring life-like graphics realism from Microsoft® DirectX® 10.1/11 compatibility. With PCI Express® 2.0/2.1 support, you're ready for games that demand fast throughput. And boost your gaming experience with AMD Hybrid Graphics multi-GPU technology – get an easy performance upgrade when you plug into a compatibility AMD 7-Series Integrated Chipset-based motherboard.

Break-through Efficiency

AMD Radeon™ HD 4670 series graphics processors deliver breakthrough efficiency from cutting-edge technology and new energy-saving features that can help lower your energy costs and enable cool, quiet PCs. Be more productive with advanced multi-monitor support and enjoy the extraordinary value.

1 - 1080p capable HD display required

Features and Specifications

AMD Radeon HD 3450, HD 4350, 4670 and HD 5450 Series

- Improved Unified Video Decoder View and manipulate the latest Blu-ray and HD DVD content with a dedicated hardware video decoder that leaves your CPU free to perform other tasks.
- Ultimate Image Quality Performance that rivals high-end HD-DVD and Blu-ray players on displays with resolutions that exceed 1080p – up to 2560x1600.¹
- Integrated Digital Outputs Enjoy your digital content the way you
 want to, with built-in HDMI that includes 5.1 surround audio for
 big screen entertainment and the latest in display connectivity;
 DisplayPort™ technology.
- PCI Express® 2.0/2.1 Get ready for the most demanding graphics applications with PCI Express 2.0 support, which allows up to twice the throughput of current AMD PCI Express cards.
- DirectX® 10.1/11 Compatibility You'll be blown away by life-like graphics from Microsoft® DirectX® games, with stunning 3D graphics and shading effects.
- AMD Hybrid Graphics Combine an AMD Radeon™ HD Series graphics card with a compatibility AMD 7-Series Integrated Chipset to improve gaming performance and multi-monitor productivity.
- AMD CrossFireX[™] multi-GPU Upgrade to even greater 3D performance quickly and easily thanks to plug-and-play AMD CrossFireX technology.
- AMD PowerPlay™ Technology power saving features that reduce power consumption at idle or during low-usage

- Runs Cool and Quiet With a smaller chip designed to use less power, your system can take advantage of high-end Windows Vista® features while running more efficiently and quieter than ever.
- Be More Productive See more and do more of your work and entertainment with advanced multi-monitor support.
- Support 3.3V, 5V and Universal 32-bit PCI slot Video-339PCI-HLX

Operating Systems

- Microsoft Windows 7
- Microsoft Windows XP
- Microsoft Windows Vista

Compatibility

- OpenGL 2.0/2.1 support
- Microsoft DirectX 10.1/11 support
- WHQL-certified for Windows Vista, Windows XP, Windows 7

System Requirement

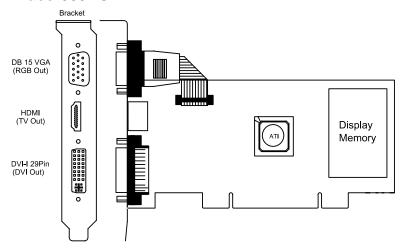
- Intel Pentium® P4 or compatible system with PCI, PCI-Express Bus (x16) Extension Slot or AGP slot depends on card purchased
- CD-ROM/DVD drive, Quad speed or faster
- Hard Drive with at least 200MB Free space
- MS Windows® 7/Vista/XP operating system
- 300 Watt or greater power supply recommended 3DForce3450
- 400 Watt (550 Watt for dual AMD CrossFireX[™]) or greater power supply recommended – Video-PX4350-DP, Video-PX4670-EX, Video-PX309-Quad, Video-339PCI-HLX
- 1GB of system memory recommended
- 3DForce3450-DVI requires a 4-pin power connector connected to the card
- For an AMD Hybrid Graphics system, a compatible AMD 7-Series Chipset-based motherboard is required
- For a complete AMD CrossFireX[™] system, a second same graphics card, an AMD CrossFireX Ready motherboard and one AMD CrossFireX Bridge Interconnect cable is required

Check List

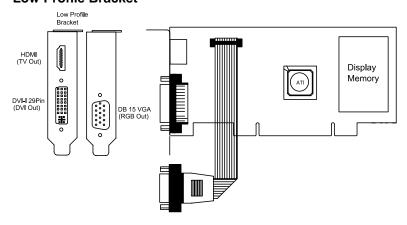
- Video-PX4670-EX, Video-PX4350-DP, Video-339PCI-HLX, Video-PX309-Quad, or 3DForce3450 series Multimedia Accelerator
- LFH 59 pin to Dual DVI adapter cable (part# CB59DVI-I2C00)
 x 2 Video-PX309-Quad
- HDTV/TV out converter cable for Component --- Video-PX4670-EX
- HDTV/TV out converter for RCA (Composite) --- Video-PX4670-EX
- DVI to HDMI converter x 1 --- Video-PX4670-EX
- Display Port to HDMI adapter Video-PX4350-DP
- Software & Documents CD
- Quick Start Guide (Printed)

Hardware Description

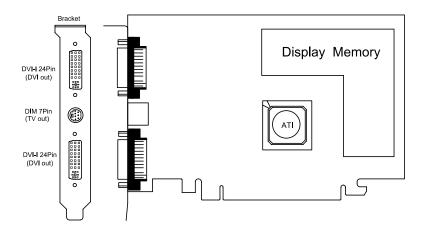
Video-339PCI-HLX



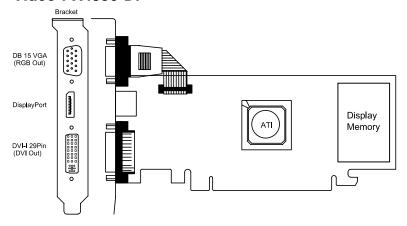
Low Profile Bracket



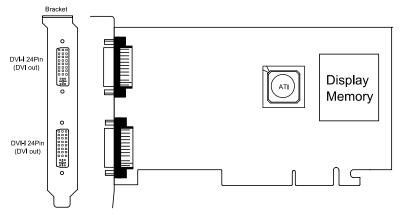
Video-PX4670-EX



Video-PX4350-DP

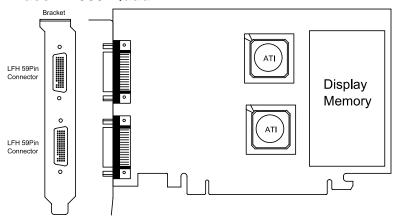


3DForce3450-DVI



^{*} Requires a 4-pin power connector from power supply to video card.

Video-PX309-Quad



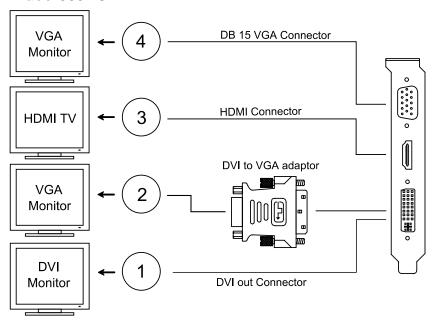
Product name / PCB version		Core Chipset	PCB Size	Memory Size	
3DForce3450-DVI	82309A	AMD Radeon HD 3450	169.00mm x 96.00mm	64M x 16 DDR2	512MB
Video-339PCI-HLX	82339P	AMD Radeon HD 5450	145.05mm x 68.91mm	64M x 16 DDR3	512MB
Video-PX309-Quad	82309W	AMD Radeon HD 3450	167.64mm x 111.13mm	64M x 16 DDR2	1GB *
Video-PX4670-EX	82319A	AMD Radeon HD 4670	167.64mm x 111.15mm	64M x 16 DDR3	1GB
Video-PX4350-DP	82329B	AMD Radeon HD 4350	167.64mm x 68.90mm	64M x 16 DDR2	512MB

^{* 1}GB is the total amount of memory onboard. The actual memory for each Graphics Processor Unit is 512MB.

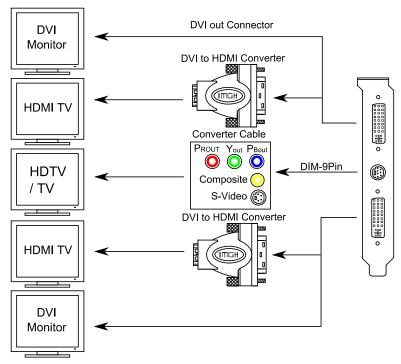
Accessories for VGA cards are sold separately. Please go to http://Store.anvshopper.net for details

Display Devices Output

Video-339PCI-HLX

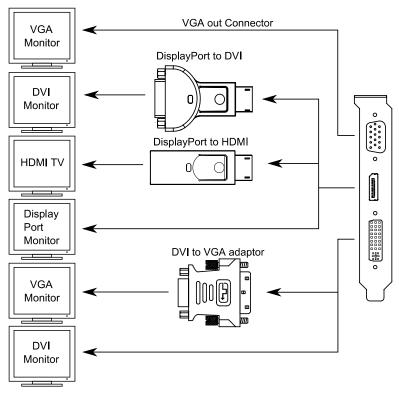


Video-PX4670-EX

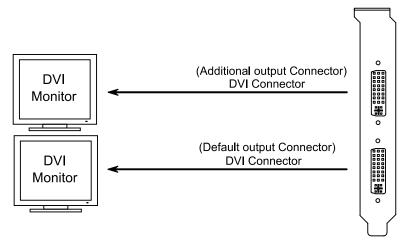


^{*} The 2 DVI ports are HDMI capable but only one HDMI will work at a time.

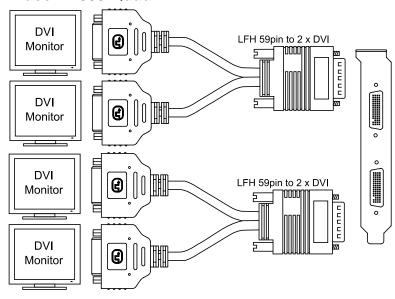
Video-PX4350-DP



3DForce3450-DVI

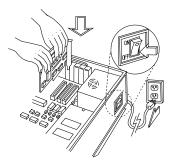


Video-PX309-Quad



Hardware Installation

Installation Procedures



!! WARNING!!

Discharge static electricity by touching the **GROUND** such as metal part of your case connected with good power ground before you handle the electronic circuit boards.

The manufacturer assumes no liability for any damage, caused directly or indirectly, by improper installation of any components by unauthorized service personnel. If you do not feel comfortable performing the installation, consult with a qualified computer technician.

Note: Make sure that your system has an adequate power supply.

- Make sure the computer, monitor, and other peripheral devices are off.
- 2. Unplug the computer power cord and disconnect the monitor cable from the back panel of the computer.

Caution:

To avoid possible damage to the motherboard, wait approximately 20 seconds after unplugging the power cord before disconnecting a peripheral or removing a component from the motherboard.

3. Remove the computer cover.

Caution:

Remember to discharge your body's static electricity by touching the power supply case or the metal surface of the computer chassis.

Tip: If necessary, consult the computer manual for help removing the cover.

- Remove any existing graphics cards from the computer. Some graphics cards can get hot while operating. Wait approximately five minutes after turning off the computer before touching the card.
- 5. Locate the appropriate bus slot on the motherboard. If necessary, remove the corresponding back panel cover.
- 6. Align the new graphics card in the bus slot and press firmly until the card is fully seated.
- 7. Fasten the graphics card securely to the back panel.
- 8. Make sure the cables are not interfering with anything inside the computer (for example, a cooling fan) and then replace the computer cover.
- 9. Reconnect any cables you have disconnected and plug in the computer power cord.
- 10. Turn on the monitor and then the computer.

The computer should start normally and the software must be installed next.

Software Installation

Installing the AMD Catalyst[™] Software Suite (Windows OS)

To install or remove software, you must have administrator rights or be logged on as a user with administrator rights.

Note: The installation dialog displays in English if the operating system's language is not supported. Software is provided to both operate and take advantage of all the features of the graphics card.

Software includes:

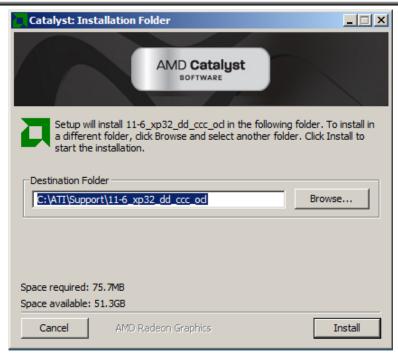
- The graphics card drivers.
- AMD Catalyst[™] Control Center software.
- HydraVision™ software (included in the custom install).
- SurroundView[™] software (included in the custom install).
- AMD Avivo™ video converter software (included in the custom install).
 - Insert the Software and Document AMD on CD.
 Note: If the install wizard does not start, navigate to the CD drive and double-click SETUP.exe.
 - 2. From the menu that appears, click Software Install.
 - 3. Follow the on-screen instructions. When prompted, select either Express or Custom .

Not all software components are installed using the Express installation. Custom installation allows you to select individual software components for installation.

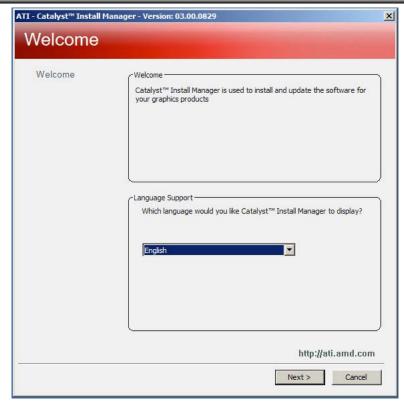
Mindows® 7, Vista and XP Driver Installation

InstallShield® Program:

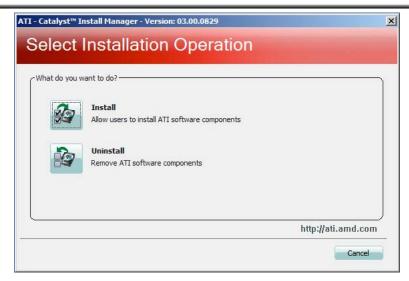
Microsoft Windows® 7 and Vista detects this new hardware and places appropriate display driver from its system folder automatically - it doesn't matter if you have added a new driver or changed the existing one. To maximize the video board acceleration and increase its performance, you may install the manufacturer's display driver as follows:



1. Click on Install to start the Installation process



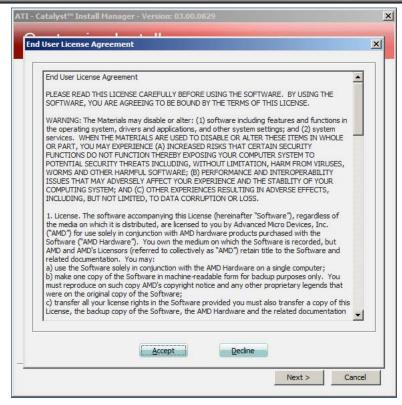
2. Select Language for Install - Click Next.



3. Select Install



4. Select Express then click Next to continue.



5. Click Accept to continue



6. Click Finish to complete the installation



7. For XP users only, Click Yes to reboot your system

Notice:

We believe that the all the installation steps mentioned above are correct for your operating system. Individual steps may be different depending on driver version and can change without notice.

Technical Assistance

Q: Why is the display shifted or changed sizes when I switch display modes?

Explain and Suggestion:

Some monitors lack auto-sizing features or just do not synchronize properly to the video board output. In some cases, horizontal and vertical display adjustments may be necessary. Use the monitor control panel functions to adjust screen.

In other cases, mode type and refresh rate adjustments may be necessary. Use the utility program, which provided by video card manufacturer or production developer. To center the display with normal type (mode 3), and to reduce (decrease) the refresh rate with the monitor's specification.

Q: What kind monitors can display 800x600 modes or higher resolution mode?

Explain and Suggestion:

To display 800x600 resolution at 60Hz refresh rate, the monitor must be capable of synchronizing a 31.5KHz horizontal scan rate (e.g., NEC 2A, 3D). At 72Hz refresh rate, the monitor must be capable of synchronizing a 48.0KHz scan rate (e.g., Sony HG 1304, NEC 4D, 5D, Seiko 1450).

To display 1024x768 interlaced mode; the monitor must be capable of synchronizing a 35.5KHz horizontal scan rate (e.g., NEC 3D, Seiko 1430 or 1440). To display 1024x768 non-interlaced mode at 60Hz, the monitor must be capable of synchronizing a 48.7KHz scan rate (e.g., Sony HG 1304, NEC 4D, 5D, Seiko 1450).

To display 1024x768 non-interlaced mode at 70Hz, the monitor must be capable of synchronizing a 56.4KHz scan rate (e.g., NEC 4D).

Q: System hangs-up after installing video driver.

Explain and Suggestion:

Today, most video drivers are developed for 32-bit processing and may require a channel to Code/Decode. Conflict between device drivers and TSR (terminate-and-stay-resident) programs will inverted the display, and are particularly effectual at crashing computer. The most effective way to check for conflicts is to replace with the original video driver, or delete and re-install the current video driver to the system.

Accomplishing IRQs (Interrupt Request Query) settings or troubleshooting the conflicts on hardware source may necessary. Most AGP video cards designed for Plug-n-Play, that means video card IRQ's setup which controls by main board's (motherboard) circuitry and BIOS. Physically pulling out other devices from system, and re-starts the computer. Confirm and modify your IRQ addresses with qualified computer technician.

Q: Multiple images or unreadable screen after loading video driver.

Explain and Suggestion:

There are a variety of reasons why the display might be distorted. One common reason is a monitor mis-match. Some older multi-frequency monitors are unable to switch video modes without being turned off, then turned on again.

If the problem occurring in windows, make sure that you have loaded that proper video driver, and that the driver is compatible with the monitor being used. Try re-configuring your application software to use a compatible video mode. If problem persist in windows, load the standard generic VGA driver. The generic VGA driver should function properly with virtually every video board and VGA (or SVGA) monitor available.

If that is an unsatisfactory solution, you may have to upgrade to a monitor that supports the desired video mode.

Some new monitors are also synchronizing this problem because built-in DDC (Data-Digital-Channel) feature. Sometime that DDC automatically setup the display frequency without loading video driver. Try to turn it off, or change settings of monitor type in your system.

Q: Selection of color, resolution and refresh rate combination that always backs to default after restart the system.

Explain and Suggestion:

Accordingly, there must be a bug (defected source-code) in video driver, or in the system. Debug the source-code or fix the error in video driver that should be done by the driver developer. Likewise, upgrade the video driver from the manufacturer or from the original software developer is necessary.

Technical Support

In the event you have a technical problem with this product, please read the README files in the software CD_ROM. Updated drivers are available through Jaton Web site. Have following information handy when you contact technical support:

- ✓ Name of the product.
- ☑ Software Driver and Version.
- ☑ System Information, such as CPU speed, BIOS version, Monitor Specification, etc.
- ☑ Description of the problems including any error messages.

Telephone: (510) 933-8886 (Mon. - Fri. 9am-5pm PST)

FAX: (510) 933-8887

email: vgasupport@jaton.com

Website: www.jaton.com

How to Obtain Warranty Service

Worldwide contact:

www.jaton.com

In United States contact:

Jaton Corporation.

Service Center

47677 Lakeview Blvd.,

Fremont, CA 94538

Tel: 510-933-8886

Fax: 510-933-8887

In Taiwan contact:

Jaton Technology Co., Ltd.

新北市汐止區大同路三段 194 號 10F

10F, No.194, Sec.3, Ta-Tung Rd., His-chih District,

New Taipei City, TAIWAN R.O.C.

Tel: 886-2-8647-1899 Fax: 886-2-8647-2679

The information in this document is subject to change without notice.

FCC SHIELDED CABLE WARNING:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation,

"SHIELD INTERFERENCE CABLE (S) MUST BE USED ACCORDING TO FCC 15.27©."

CAUTION:

Changes or modifications not expressly approved by the Manufacturer could void your authority to operate this equipment in accordance with FCC rules and regulations.

SOFTWARE LICENSE AGREEMENT:

The Company grants the customer a non-exclusive, non-transferable license to use the software in this package for internal use on a single computer system. No other license of any kind is granted to any part of the product or any of the intellectual property therein.

Limited Warranty

Manufacturer warrants that all PC Products sold in United States are free from defects in material and workmanship for a period of one year from manufacturing date or from date of purchase.

For Users that register product within 60 days of purchase Jaton will provide Two years warranty from manufacturing date or from date of purchase. Some specific models may warrant for one year. (All Jaton Products Sold in U.S.A) Limited warranty applies only to the original purchaser of Jaton Product and is not transferable. This limited warranty does not apply if customer failed to Register Product, or over sixty (60) days from date of purchase (original invoice date). Users MUST register product within 60 days of purchase (from original invoice date) to receive Two years warranty. All products not registered within 60 days will ONLY receive a 1 year limited warranty from the purchase date (original invoice date).

This Limited Warranty does not cover any incompatibilities due to the user's computer, hardware, software or any related system configuration in which the Jaton Products interfaces. Manufacturer does not guarantee the compatibility of the video cards with any hardware components, systems or software that's available in the market. If a product is deemed incompatible by Manufacturer tech support, the product in question is therefore not defective and thus no warranty will be provided. It is the buyer's sole responsibility to do their own research and determine if the products to be purchased are compatible to the hardware components, systems or software they intend to use with. Proof of purchase will be required before any consideration by Manufacturer occurs. If you find any damage or missing items, please contact your dealer (point-of-purchase) as soon as possible.

Products purchased second hand or from an auction site do not carry any warranty.

Jaton Corp. does not offer refund on products not purchased directly from Jaton Corp. Refund claims would need to be processed through the vendor that sold the product, congruent to their return policy.

Jaton Corp. reserves the right to claim for shipping fees along with a service charge from the customer for any incomplete or modified product that is returned and requires repair or replacement, or when the customer is not entitled to any coverage under this warranty.

TRADEMARK AND COPYRIGHT:

This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

All Trademarks and Registered Trademarks belong to respective owners. ©2011 Jaton Corporation. All rights reserved.

Other Limits

The forgoing is in lieu of all other warranties, expressed or implied. Including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Manufacturer does not warrant against damages or defects arising out of improper or abnormal use of handling of the products; against defects or damages arising from improper installation (where installation is by persons other than Manufacturer), against defects in products or components not manufactured or installed by Manufacturer, or against damages result from non-manufacturer made products or components. This warranty does not apply if accident, abuse, nor misuse has damaged the Product. This warranty also does not apply to products upon which repairs have been affected or attempted by persons other than pursuant to written authorization by Manufacturer.

Exclusive Obligation

This warranty is exclusive. The sole and exclusive obligation of Manufacturer shall repair or replace the defective products in the manner and for the period provided above. Manufacturer shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, and strict liability or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, Manufacturer shall not be liable for incidental, special, or consequential damage.

Other Statements

Manufacturer's employees or representatives' **ORAL OR OTHER WRITTEN STATEMENTS DO NOT CONSTITUTE WARRANTIES**, shall not be relied upon by Buyer, and is not a part of the contract for sale or this Limited Warranty.

Terms and Conditions

Direct Jaton Customer: This warranty applies only for a period of

two (2) years from purchase date of Jaton

original invoice.

Reseller/ Vendor: This warranty applies only for a period of

two (2) years from manufacturing date.

Registered User: This warranty applies only for a period of

two (2) years from purchase date and MUST register within 60 days of purchase date from legal reseller. If Failure to register within 60 days from date of

purchase then the warranty is one (1) year

from the purchase date.

Others: If the products do not conform to this

Limited Warranty (as herein above described), Manufacturer should charge services such as repair, replacement whether based on its costs. Shipping and installation of the replacement Products or

replacement parts shall be at User's

expanse.

Services agreement:

- All applicants shall complete service request form from Manufacturer.
- (2) All returned checks will be charged a \$20.00 fee by Manufacturer.
- (3) All repair and replacement services allow 4-6 weeks from the date of receiving by Manufacturer.
- (4) All products without warranties require service processing fee \$20 (payment in advance), which is not refundable.

Entire Obligation

This Limited Warranty states the entire obligation of Manufacturer with respect to the Products. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in force and effect. Some states do not allow limitation of implied warranties, or exclusive or limitation on product incidental or consequential damages, so above limitation may not apply to you. This warranty gives you specific legal rights. You may have other rights, which may vary from state to state.

This warranty applies only to this product, and is governed by the law of the State of California.

Reducing Warranty Claim Rejections

To reduce the potential of incurring damages not covered by Manufacturers warranties, we strongly recommend the following:

- Read your manuals before installing peripherals and/or before making changes to the machine's configuration;
- Ask your dealer if there are any known problems with the system requirements or installation procedures for any add-on products that your are purchasing;
- Buy industry standard products where compatibility issue are less likely to surface;
- If you are unsure about installation for a new product, contact your dealer's service department.

We believe it is important for you to know and understand what your warranty coverage provides and what it does not.

We also want you to be aware that most hardware warranties only relate to the function of the hardware. In most cases, no assurances are given by the manufacturer that the hardware item will work in conjunction with any other hardware item. If a computer product is not working because it is not compatible with another product, or because it has not been properly installed and set-up, the manufacturer does not pay for the service time. To help avoid these inconveniences, contact a professional consultant that one can help you determine the possibility of incompatibility issue before you purchase add-on or accessories.

Warranty Service Use Only

Video-PX4670-EX 1GB

Product Label / Serial Number Sticker / Manufacture Date code

Part Number: Video-PX4670-EX Serial Number: A097E10028S 09 – Manufactured in 2009 7 – Manufactured in July